

IN THE CLAIMS

Please amend the claims to read as follows.

500 I' > 1 82. (Amended) The method as in claim 80, further comprising:  
2 processing decompression as said specialized processing.

H' 1 83. (Amended) The method as in claim 80, further comprising:  
2 processing encryption as said specialized processing.

1 84. (Amended) The method as in claim 80, further comprising:  
2 processing routing as said specialized processing

Please add new claims 97 - 110 as follows:

SUB I > 1 97. A router for distributing packets in a network, the packets originate at a source and  
2 are routed to a destination, comprising:  
3 a plurality of route processing engines located within said router;  
4 a mechanism that performs a hashing function on at least a portion of network layer  
5 information in said packets, said information indicating said destination, said hashing func-  
6 tion producing an indicia of a flow; and  
7 a classification engine to switch packets with a same said indicia of a flow to a single  
8 route processing engine of said plurality of route processing engines.

H<sup>2</sup> 1 98. The apparatus of claim 97, further comprising:  
2 said packets are a plurality of packets, individual packets of said plurality of packets  
3 arrive in substantially random order to produce different values of said information in ran-  
4 dom order, and said classification engine carries out a hashing function to produce said indi-  
5 cia of flow, and different values of said indicia of flow are in substantially random order in  
6 response to said plurality of packets arriving in random order, and a particular flow always  
7 produces a same indicia of flow, and said particular flow is assigned to a particular route  
8 processing engine in the order that a first packet of said particular flow first arrives at said  
9 router.

1 99. The apparatus of claim 98 further comprising:  
2 said random order of arrival of said first packet of said particular flow leads to a sub-  
3 stantially uniform distribution of packets being assigned to said route processing engines.

1 100. The router of claim 97, further comprising:

2       said information indicating said destination includes a destination address of said  
3 destination.

1   101. A method of operating a router, comprising:  
2       receiving a packet by said router, said packet addressed to a destination, said router  
3       having a plurality of route processing engines;  
4       hashing a portion of a network layer information of said packet, said information in-  
5       dicating said destination, to determine an indication of a flow:  
6       selecting, in response to said indication of a flow, one processing engine of said plu-  
7       rality of processing engines to process the flow indicated.

*Cont*  
*H<sup>2</sup>*  
1   102. The method of claim 101, further comprising:  
2       said receiving step receives a plurality of packets, individual packets of said plurality  
3       of packets arrive in substantially random order to produce different values of said informa-  
4       tion in random order;  
5       said hashing step produces different values of said indication of a flow in substan-  
6       tially random order in response to said plurality of packets arriving in random order;  
7       producing by a particular flow a same indicia of flow;  
8       assigning said particular flow to a particular route processing engine in the order that  
9       a first packet of said particular flow first arrives at said router.

1   103. The method of claim 102 further comprising:  
2       assigning, in response to said random order of arrival of said first packet of said par-  
3       ticular flow, a substantially uniform distribution of packets to said route processing engines.

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1 104. The method of claim 101, further comprising:

2 including in said information a destination address of said destination.

1 105. A router, comprising:

2 a port adapter to receive a packet by said router, said packet addressed to a destina-  
3 tion, said router having a plurality of route processing engines;

4 means for hashing a portion of a network layer information of said packet, said in-  
5 formation indicating said destination, to determine an indication of a flow:

6 means for selecting, in response to said indication of a flow, one processing engine of  
7 said plurality of processing engines to process the flow indicated.

1 106. The apparatus of claim 105, further comprising:

2 means for receiving a plurality of packets, individual packets of said plurality of  
3 packets arrive in substantially random order to produce different values of said information  
4 in random order;

5 means for producing different values of said indication of a flow in substantially ran-  
6 dom order in response to said plurality of packets arriving in random order;

7 means for producing by a particular flow a same indicia of flow;

8 means for assigning said particular flow to a particular route processing engine in the  
9 order that a first packet of said particular flow first arrives at said router.

1 107. The apparatus of claim 106 further comprising:

2 means for assigning, in response to said random order of arrival of said first packet of  
3 said particular flow, a substantially uniform distribution of packets to said route processing  
4 engines.

1 108. The apparatus of claim 105, further comprising:  
2 said information includes a destination address of said destination.

1 109. A computer readable media, comprising:  
2 said computer readable media having instructions written thereon for execution on a  
3 processor for the practice of the method of claim 101.

1 110. Electromagnetic signals propagating on a computer network, comprising:  
2 said electromagnetic signals carrying instructions for execution on a processor for the  
3 practice of the method of claim 101.